

32. The method of claim 30 wherein said remote control means comprise providing one or more switches worn on the person of players and spectators that control said timer by transmitting change-of-state by wireless communication and further comprise a receiver which, upon detection of the change-of-state signal, causes said processor to start or stop said timer.

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33. The method of claim 30 wherein said audio files are stored digitally.

34. The method of claim 30 additionally providing a visual display that displays remaining time on said timer.

Abstract:

Please replace the abstract of record with the following new abstract:

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"A sports timing and annunciation system is remotely controlled by players in unofficiated games. Players start and stop game timers by wireless communication to a base unit using a switching device on their person. The system audibly announces time-in, time-out, remaining time and key game events. The device simulates time control and announcements found in officiated games."

Remarks – General

The applicants have rewritten all claims to define the invention more distinctly in order to overcome the technical rejections and define the invention patentably over prior art.

Further, the specification, claims and abstract have been revised carefully to correct all editorial errors and informalities.

The following outline follows that of the Office Action.



1. The Objection to the Drawings under 37 CFR 1.83(a).

Figure 1 has been revised to show the second timer as stated in claims 2, 9, and 15 (new claims 22, 27, and 31). Microprocessors inherently have a master clock that controls various timing functions, and First Timer 13 and Second Timer 15 are now shown explicitly in Figure 1 associated with Clock 22. Further, please note that Figure 7 shows the functionality of the second timer in detail for the particular example in which the second timer is used as a shot clock. In the application section entitled Brief Description of the Drawings, Figure 7 is described as "a flow chart of the secondary timer, illustrating the timing-announcement logic for a shot clock in basketball."

Regarding voice recognition software, applicants hereby elect to eliminate claims 4 and 11.

Regarding frequency detection software, applicants hereby elect to eliminate claims 5 and 12.

- 2. The entire disclosure has been revised carefully to correct grammatical and idiomatic errors in accordance with examiner's instructions.**
- 3. Regarding indefinite phrases in Claims 1-3, these claims have been eliminated and replaced by new Claims 21-23 not containing indefinite phrases.**

Claims 4 and 5 have been eliminated as mentioned above. Claims 6 and 7 have been replaced by new Claims 24 and 25.

- 4. Applicants address objections under 35 USC 103(a) in the following paragraphs.**
- 5. Objections to claims 1-3 and 5-7 as being unpatentable over Costabile in combination with Hegarty et al [hereinafter Hegarty] are Overcome.**

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Claim 5 has been eliminated. Regarding the remaining claims:

The Present Invention is Distinct from Costabile's

The present invention is distinct from Costabile in the following specific ways:

- a. The present invention communicates key game events by means of audible announcements. Costabile uses the conventional means of visual display. The advantages of audible announcements are:
 - 1) All players are informed simultaneously; and
 - 2) Players do not need to look away from the game to receive the information. In contrast, a visual display requires glancing away from the game toward the display in order to receive the information; and
 - 3) Location of the base unit containing the timer is not critical. Players can locate audible timer anywhere off but near the playing court and it will be heard. However, the location of visual displays such as shown in Costabile's Figure 1, is important. It must be placed where it can be easily seen, must be high enough for all to see, must be away from the sun to provide sufficient visual contrast, and must be at an acceptable angle with respect to the horizon and with respect to the court.
- b. The present invention allows the game and shot clock to be controlled remotely by players. This is a key factor in unofficiated games. Costabile, in contrast, provides a means for officials to control the clocks. It is clearly intended for officiated games and there is no intention in Costabile to provide a means for players to control the game clock. The advantages of the present invention in this regard are:
 - 1) Eliminates the necessity of having an official controlling the time; and
 - 2) Allows unofficiated games to provide timing that is similar to and is an approximation to the timing used in professional and other officiated games.



The Present Invention is Distinct from Hegarty's

The present invention is distinct from Hegarty's in the following ways:

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- a. The present invention allows for two different, independent timers to be controlled (turned on and off). For example, in basketball the shot clock can be started or stopped as game action requires, while the game clock is continuously operating. Hegarty's timings all proceed from one prime mover (rotator).
 - b. The present invention is asynchronous, that is, the clocks are intended to be started and stopped at any time by human decision. Hegarty's timepiece is a true clock that is intended to continue measuring the passage of time until it breaks. There is no provision for a human to start and stop the clock on any kind of frequent basis. Hegarty's invention provides no means for remote control. It is intended for manual, local control only.
 - c. Hegarty's invention is clearly not intended for sports games and sports players. It is intended for more formal settings in which chimes such as Big Ben's melody is appropriate. The applicants respectfully submit that the dramatically different fields and purposes of the present invention and Hegarty's imply a different concept at work between the two inventions.

A combination of Costabile and Hegarty's inventions do not cover the features of the present invention.

- a. A combination of the two referenced inventions would still use officials to control timing. The present invention does not: it uses players to control the timers. This is an extremely important advantage for unofficiated games.
- b. The combination of the two referenced inventions would still rely on music for annunciation. The present invention using real game sounds comprising announcer voice and end-of-time horn.

Costabile and Hegarty's inventions cannot logically be combined

The two inventions are highly divergent. Costabile teaches how a game clock can be controlled remotely by an official. Costabile's invention is inherently and necessarily asynchronous, that is, the point of the invention is to allow a means for officials to start and stop a clock in response to game action. It's clock does not run continuously. That would defeat the purpose of the official's signaling. When an official stops the clock and it is restarted, it starts at the stopped time, not real time. Time in a sports game is imaginary time. It starts and stops and does not have the continuity of real time.

Hegarty's invention inherently and necessarily uses real time. It never stops. A time interruption, such as caused by a power failure, would be a problem in Hegarty's clock. After a power failure, the clock would be reset to real time. It would not be reset to the time when it stopped.

The two patents teach away from each other in another related way. Costabile's invention is inherently designed for human intervention. It necessarily involves officials in a sports game. Hegarty's is inherently designed to avoid human intervention, except when initially programmed to play certain chime tones. Hegarty's is not intended for a human to stop the clock every few minutes. It is designed for minimal or no human intervention, whereas Costabile's is designed for intensive human intervention.

There is no suggestion or implication that Costabile and Hegarty's inventions be combined.

The two inventions are from such widely different fields, with such divergent purposes, that there is no hint in either patent about the desirability of such a combination.

It is highly unlikely that either would propose a combination of their two inventions. Hegarty's clock is synchronous. Its chimes are preprogrammed based on standard intervals such as length of the day, the phase of the moon, and so forth. Costabile teaches

a timer – which is asynchronous, that is, unpredictable. When a time-out is called cannot be predicted before a game, but the occurrence of any of Hegarty's times, such as "8 O'clock" is absolutely predictable. Hegarty's clock does not respond to real time human activities.

Costabile and Hegarty's inventions cannot legally be combined

In order for prior art references to be combined, there must be suggestion of such a combination in the references themselves.

In re Sernaker, 217 U.S.P.Q. 1, 6 (C.A.F.C. 1983):

"Prior art references in combination do not make an invention obvious *unless something in the prior art references would suggest* the advantage to be derived from combining their teachings." [Emphasis added.]

In orthopedic Equipment Co. v. United States, 217 U.S.P.Q. 193, 199 (CAFC 1983):

"It is wrong to use the patent in suit [here the patent application] as a guide through the maze of prior art references, combining the right references in the right way to achieve the result of the claims in suit [here the claims pending]. Monday morning quarterbacking is quite improper when resolving the question of nonobviousness in a court of law [here the PTO]."

In Uniroyal, Inc. v. Rudkin-Wiley Corp., 5 U.S.P.Q.2d 1434 (C.A.F.C. 1988), "[w]here prior-art references require selective combination by the court to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight gleaned from the invention itself . . . *something in the prior art must suggest* the desirability and thus the obviousness of making the combination." [Emphasis added.]

In Ex parte Levengood, 28 U.S.P.Q.2d 1300 (P.T.O.B.A.&I. 1993):

"In order to establish a prima facie case of obviousness, it is necessary for the examiner to present evidence, preferably in the form of some teaching, suggestion, incentive or

inference in the applied prior art, or in the form of generally available knowledge, that one having ordinary skill in the art *would have been led* to combine the relevant teachings of the applied references in the proposed manner to arrive at the claimed invention ... That which is within the capabilities of one skilled in the art is not synonymous with obviousness ... Accordingly, an examiner cannot establish obviousness by locating references which describe various aspects of a patent applicant's invention without also providing evidence of the motivating force which would impel one skilled in the art to do what the patent applicant has done." [Emphasis added.]

No evidence was presented in the Office Action to support the contention that one having ordinary skill in the art would have been led to combine the relevant teachings of the applied references in the proposed manner to arrive at the claimed invention.

The Present Invention provides a new, useful, and unexpected result

Currently there is no practical way for players to monitor and control timing in an informal, unofficiated sports game with the quality of time control similar to that of an officiated game (in which there are referees, a time keeper, timing devices and large displays).

Consider the options currently available to a small group of persons who want to play an informal game of basketball in a playground or driveway, and who would like to time the game and shot clock:

- (a) An ordinary clock is unsatisfactory. Players would have to continually look at the clock and mentally calculate remaining time.
- (b) A player uses a stop watch for the shot clock. This player has to frequently look at the stop watch to determine when the shot time is up -- all the while not concentrating on the game -- and then hope the opposing team believes him.
- (c) A large display, perhaps similar to those used in school auditoriums, but portable, is impractical. To be seen at half-court the display must be large, which will also tend to make it heavy and expensive. To be seen by all, it would have to be raised up,

perhaps suspended from a tree or hung on a fence. This is clearly not practical for a pickup game.

- (d) Players tape record an officiated game and play it back during their game. It will have all the exciting sounds of an officiated game, but the calls to stop the game clock or start the shot clock on the tape will have no meaning in the pickup game unless someone manually turns the playback on and off at the appropriate times. This is clearly not practical.

Thus the new and useful result of the present invention is that it allows players in an informal, unofficiated game to have the same timing capability as in officiated games by using a small, portable, inexpensive box with a speaker. This is an unexpected result of switching from a visual display to audible announcements.

A further unexpected result is that the present invention not only communicates timing information in a fair manner to all players simultaneously, but can duplicate the sounds of an exciting officiated game including the prerecorded voice of famous announcers, crowd noise, and the end-of-time horn – all at appropriate times in the unofficiated game.

The Second timer is not a duplication

Applicants respectfully submit that the second timer is not a mere duplication of the first timer. The primary (“game”) timer always progresses in the same direction, from maximum game time, which occurs at the beginning of the game, to “0” time remaining, which occurs at the end of the game.

The secondary timer is started at a time based on a human decision about play action and proceeds to decrement until its time runs out or a shot is played or the game is ended. Most of the time it will never reach “0” time remaining because that would incur a penalty for the offensive team and they would avoid that situation. For example the secondary timer might run from 25 seconds to 5 seconds at which time it would be reset

to 25 seconds, ready for the next shot clock call. Thus time on the secondary timer both decreases and increases.

It can be seen that the range of time, the purpose, and the mode of operation of the primary and secondary timers is substantially different. The two timers are also essentially independent. The secondary timer can be started and stopped, while the primary game timer operates continuously.

6. Objections to claims 4 and 14-20 as being unpatentable over Costabile in combination with Hegarty and in further view of JP 357063467 are Overcome.

Applicants hereby elect to eliminate claims 4 and 17 which specify voice recognition and a microphone. JP 357063467 has only been cited in reference to voice recognition claims and these have been eliminated.

Applicants hereby elect to eliminate claim 18 which specify a whistle or other acoustic tone generator and microphone and frequency detection software.

The method claims 14-16 and 20 are fully supported by the reasoning in paragraph 5 above.

7. Objections to claims 8-13 as being unpatentable over Costabile in view of JP 357063467 are Overcome.

Applicants hereby elect to eliminate claim 11 which specifies voice recognition and a microphone.

Applicants hereby elect to eliminate claim 12 which specifies a whistle or other acoustic tone generator and microphone and frequency detection software.

The method claims 8-10 and 13 are fully supported by the reasoning in paragraph 5 above. The effect of JP 357063467 is discussed below.

JP 357063467 teaches a talking watch. It is clearly distinct from the present invention because it is not remotely controlled; would not have enough acoustic power to be heard a half-court away; does not have two independent timers; is not designed for realistic sports game sounds including an end-time horn. Since claim 11 has been eliminated, the voice recognition feature of JP 357063467 is no longer relevant. It's only relevance is the voice announcements that it is capable of. As argued above, the mere fact that voice synthesis exists in prior art does not invalidate the present invention. There is no suggestion in the cited JP patent that it be used to broadcast over a significant open area, and independently control various timings in a sports game.

Even the combination of Costabile, Hegarty and JP 357063467 do not provide the same functionality and features as the present invention. The combination would still not provide the necessity of controlling time without officials, and the provision of broadcast announcements with actual game sounds.

The fact that three widely diverse patents have been cited in an attempt to produce the same features and benefits as the present invention argues for its unobviousness.

8. Inventorship

Applicants affirm that the subject matter of the claims was commonly owned at the time any inventions covered herein were made.

Conclusion

Applicants respectfully request that the application be reconsidered in light of the enclosed exposition as well as the revision of the Abstract, Figure 1, Claims, and Specification.

**Request for Constructive Assistance**

It is submitted that patentable subject matter is clearly present. If the Examiner agrees yet, despite the best efforts of the applicants, neither of whom are patent attorneys nor are represented by patent attorneys or agents, the application is deemed deficient in some manner, applicants respectfully request the assistance of the Examiner in overcoming such deficiencies, in accordance with M.P.E.P Section 707.07(j).

Very respectfully,

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